ARTICLE XXIV. SOLAR ENERGY SYSTEMS

Section 1. Purpose.

The purpose of this Article is to regulate the installation of solar energy systems and promote their safe and effective use. Regulating standards for the siting, placement, design, construction, operation, monitoring, modification and decommissioning of such installations will address public safety, minimize impacts on environmental, scenic, natural and historic resources and provide clean, domestically-sourced alternatives to our existing and future energy supply needs.

Section 2. Definitions.

For the purposes of this ordinance, the following terms shall have the following meanings:

a. Brownfield Site: An impaired site that is recognized by the state Department of Environmental Management, or as those properties which had previously been operated as mines, quarries, or gravel pits as identified on the Town of Tiverton Land Use Map in the Comprehensive Community Plan and for which no subsequent use has been adopted by the land owner.

b. Ground-Mounted Solar Energy System: A solar energy system that is structurally appended to the ground and is not supported to a structure or building.

c. Large Solar Energy System: A ground-mounted solar energy system that has a solar land coverage of more than 40,000 square feet.

d. Medium Solar Energy System: A ground-mounted solar energy system that has a solar land coverage of more than 1,600 square feet up to 40,000 square feet.

e. Roof-Mounted Solar Energy System: A solar energy system that is structurally appended to the roof of a building or structure.

f. Small Solar Energy System: A ground-mounted solar energy system that has a solar land coverage of 1,600 square feet or less.

g. Solar Canopy Energy System: A solar energy system that is located on a new elevated structure that hosts solar panels and provides shelter to a parking area, driveway or walkway underneath.

h. Solar Energy System: The equipment and requisite hardware that provide and are used for collecting, transferring, converting, storing, or using incident solar energy for water heating, space heating, cooling, generating electricity, or other applications that would otherwise require the use of a conventional carbon-based source of energy such as petroleum or natural gas. This shall include photovoltaic arrays and installations that utilize building-mounted and/or ground-mounted systems.

i. Solar Land Coverage: The total footprint of land occupied by all components of a solar energy system including but not limited to solar panels, mounting equipment, ancillary components of the system, inter-row and panel/collector spacing, access, and all other area within the required perimeter security fencing.

Section 3. General Requirements

a. Uses: Solar Energy Systems uses are contained in Article IV. District Use Regulations Section 5. h., i., j., and k.

b. Setbacks: Ground-mounted Solar Energy System uses are contained in Article V. District Dimensional Regulations.

c. Height: The maximum height of a ground-mounted system shall be twelve (12) feet. The height for a ground-mounted system shall be measured from the ground level or the base of the system's pedestal to the highest point of the solar energy system, including the top of any support structure or panel.

d. Frontage: Frontage is contained in Article V. District Dimensional Regulations. Section 2. General requirements. d.

e. Solar Land Coverage: The maximum solar land coverage for a ground-mounted Solar Energy System within an R-30, R-40, R-60, and R-80 is 20%. Maximum solar land coverage for Medium and Large Solar Energy System in GC and HC zones is 50%. Maximum solar land coverage for Medium and Large Solar Energy System in I zones is 75%. Maximum solar land coverage for brownfield sites in any zoning district is 80%.

Section 4. Roof-Mounted Solar and Solar Canopy Energy Systems

a. Roof-mounted solar energy systems shall be reviewed for compliance by the Building Official or designee and is the permitting authority.

b. A shingle or solar panels installation requires a standard red rectangle sign stating "photovoltaic power source" and shall be mounted in the immediate area of the electric meter. A photovoltaic power source disconnect accessible from the ground shall be installed in the same area.

c. Roof mounted structures are exempt from any screening devices.

d. Roof-mounted solar and solar canopy energy systems shall not exceed the maximum height for the applicable zoning district.

e. Location of roof-mounted solar energy systems on buildings listed in the United States National Register of Historic Places as identified in the Tiverton Comprehensive Community Plan as a Historical and Architectural Resources shall not be visible from the public right of way and follow the Secretary of the Interior's Standards for Rehabilitation. (https://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm)

f. Solar canopy systems for existing structures shall be reviewed for compliance by the Building Official and is the permitting authority.

Section 5. Small Solar Energy System

a. Location: Small Solar Energy Systems shall only be located in the side or rear year of the lot.

b. Screening. Small Solar Energy Systems shall maintain a twenty (20) foot vegetated buffer from all adjacent properties and roadways.

Section 6. Medium and Large Solar Energy System

a. Medium and large solar energy system applications shall follow the established process for Development Plan Review or Major Land Development Review as described in the Tiverton Land Development and Subdivision Regulations.

b. All installations shall be in compliance with the RI State Building Code and the RI State Electrical Code, and shall be subject to periodic inspections by the Tiverton Building Official. All relevant installation components must have an UL listing or equivalent.

c. Minimize clearing of natural vegetation from the site of the solar installation. Clearing shall be limited to what is necessary for the construction, operation and maintenance of the facility. Vegetative cover shall be maintained to prevent soil erosion. Pollinator-friendly seed mixes and native plants shall be used to the maximum extent possible.

d. Minimize re-grading. No removal of topsoil or unnecessary disturbance of the ground or grading is permitted as part of the installation or maintenance of the solar installation. Any topsoil that must be removed shall be stored and stabilized on-site for future use. In no case shall soil be exported from the site.

e. On-site drainage management and erosion and sedimentation control measures shall conform to the current Rhode Island Stormwater Design and Installation Standards Manual, the Rhode Island Soil Erosion and Sediment Control (SESC) Handbook, and all applicable town regulations.

f. Power and communication lines running between solar panels to the off-site electric distribution system shall be buried underground.

g. All appurtenant structures, including but not limited to, equipment shelters, transformers, and substations, whenever reasonable, shall be screened from view by vegetation or fencing to avoid adverse visual impacts.

h. Solar panel spacing: The panel inter-row spacing shall be a minimum of twelve (12) feet wide to allow accessibility for maintenance and emergency response vehicles.

i. Roadway: Large solar energy systems shall provide a perimeter roadway inside the fencing of the installation and a minimum distance between the fencing as required by the Fire Marshal for emergency response vehicles.

j. Fencing: Medium and large solar energy systems shall be enclosed by perimeter fencing designed to prevent unauthorized access, of no less than seven (7) and no more than ten (10) feet in height, and comply with the current Rhode Island Department of Environmental Management fencing ground clearance standard. It shall be black, green, brown, or another natural color that blends into the vegetative surroundings. Barbed wire fencing is prohibited.

k. Signage: No signs are allowed on the security perimeter fencing except for a sign displaying the installation name, address and emergency contact information, and trespassing/warning/danger signs to ensure the safety of individuals who may come in contact with the installation. A local twenty-four (24) hour emergency contact telephone number shall be identified. No sign shall exceed four square feet in area.

l. Lighting: Externally lit signs are allowed, provided they are oriented such that the light is directed away from any adjacent properties and traffic arteries.

m. Landscaping Plan: A landscaping plan shall be prepared by a Rhode Island licensed landscaping architect. It shall incorporate landscaping and design elements to visually screen the installation from view of public roads and abutting properties and promote an environmentally friendly habitat.

(1) A newly landscaped vegetative buffer shall consist of a mix of deciduous and evergreen species plants from the Rhode Island native plant database.

(2) An existing or proposed vegetative buffer shall be a minimum of six (6) feet in height and a medium or large SES shall maintain a vegetative buffer thirty (30) feet wide and may be within the required setback.

(3) Planting of the vegetative screen shall be completed prior to final site inspection of the solar energy installation.

(4) A performance bond to cover costs and maintenance of the approved landscaping plan shall be required and active for at least three (3) years which shall be posted prior to issuance of any building permits. Third-party cost estimates shall be submitted as part of the major land development process.

(5) The Landscape Plan may utilize groundcover that promotes a habitat for fauna and a vegetative buffer designed to create nesting and food sources for local habitat

n. Abandonment and Decommissioning: The physical removal of all solar energy systems, foundations, equipment, security barriers, fencing, and transmission lines from the site is the responsibility of the parcel owner within ninety (90) days of cessation of operations. Reusable components are to be recycled whenever feasible.

(1) A Decommissioning Plan shall be prepared with a surety bond to cover the cost of removal and restoration of the site shall be required. The surety shall be posted prior to the issuance of any building permits.

(2) Stabilization, re-vegetation or reforestation of the site including the access and perimeter roadways in accordance with a plan that is in compliance with all State and local laws, regulations and ordinances necessary to minimize erosion. Upon commencement of the decommissioning, the work should be completed within one (1) year.

(3) Provide written notification to the Building Official within ninety (90) days of the proposed date of discontinued operation and plans for removal. The schedule shall be submitted to the Building/Zoning Official.

(4) The cash or bond decommissioning surety shall only be released by vote of the Town Council.

(5) If the owner/operator of a medium or large ground-mounted SES or energy storage facility fails to remove the facility within ninety (90) days of abandonment, following notification the Town Council may vote to call the surety and may physically remove the installation and restore the site.

o. Operation and Maintenance Plan shall be prepared and include the following measures:

(1) Site access: the owner/operator shall be responsible for maintenance of all site access, perimeter roadway(s) and inter-row spacing to allow for the passage of personnel and maintenance or emergency vehicles.

(2) Emergency responder: plan approval is required from the Tiverton Fire and Police Departments to address public safety and emergency personnel and vehicle access.

(3) Stormwater management plan approval required by Federal or State agencies and the Department of Public Works Director or designee.

(4) Landscape maintenance plan: a quarterly mowing/trimming schedule shall be provided to maintain the groundcover as required by the Fire Marshal.

(5) Installation maintenance plan: the owner/operator shall be responsible for the cost of maintaining the installation in good physical condition; including equipment, perimeter fencing and structural repairs. Malfunctioning or inoperable equipment shall be removed from the property and disposed of in accordance with all applicable Federal, State and local regulations.

(6) Emergency Response Plan shall be developed and approved by the Fire Marshal, the plan includes all means of shutting down the solar energy installation. The operator shall provide the name of an authorized contact person throughout the life of the installation. The name of the designated individual shall be kept current and on file with the Town's Building Official, the Director of the Department of Public Works and the Tiverton Police and Fire Departments.

Additional Changes Needed in Zoning Ordinance:

ARTICLE II. DEFINITIONS

b. Definitions are also contained within articles XII, XXI, XXII, and XXIV relating to Sign Regulations, Low and Moderate Income Housing, Impact Fees, and Solar Energy Systems, respectively.

ARTICLE IV. DISTRICT USE REGULATIONS

Section 5. Public utility uses.

		R-30	R-40	R-60	R-80	VC	GC*	HC	W	I	OS	TMS	PFD	NB
h.	Roof Mounted Solar Energy System	P	P	P	P	S	P	P	P	P	N	P	P	P

i.	Small Solar Energy System	P	P	P	P	S	P	P	N	P	N	P	P	P
j.	Medium Solar Energy System	S	S	S	S	N	S	P	N	P	N	S	S	S
k.	Large Solar Energy System	S	S	S	S	N	S	P	N	P	N	S	S	S
l.	Solar Canopy	S	S	S	S	S	P	P	S	P	N	P	P	P
m.	Public utility structure not otherwise specified (was h.)	S	S	S	S	N	S	S	S	S	N	S	S	S

ARTICLE V. DISTRICT DIMENSIONAL REGULATIONS

Section 1. Dimensional regulations table.

	Lot Area	Front Yard	Rear Yard	Side Yard, each side
Uses in R-30 Residential District				
Small Solar Energy System	30,000 sq. ft.	35 ft.	40 ft.	20 ft.
Medium Solar Energy System	3 acres	100 ft.	100 ft.	100 ft.
Large Solar Energy System	3 acres	250 ft.	250 ft.	250 ft.
Uses in R-40 Residential District				
Small Solar Energy System	40,000 sq. ft.	40 ft.	60 ft.	30 ft.
Medium Solar Energy System	3 acres	100 ft.	100 ft.	100 ft.
Large Solar Energy System	3 acres	250 ft.	250 ft.	250 ft.
Uses in R-60 Residential District				
Small Solar Energy System	60,000 sq. ft.	45 ft.	80 ft.	35 ft.
Medium Solar Energy System	60,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	60,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in R-80 Residential District				

Small Solar Energy System	80,000 sq. ft.	50 ft.	100 ft.	35 ft.
Medium Solar Energy System	80,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	80,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in GC Commercial District				
Small Solar Energy System	12,000 sq. ft.	35 ft.	40 ft.	20 ft.
Medium Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in HC Commercial District				
Small Solar Energy System	20,000 sq. ft.	40 ft.	50 ft.	20 ft.
Medium Solar Energy System	20,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	20,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in I Industrial District				
Small Solar Energy System	40,000 sq. ft.	40 ft.	60 ft.	35 ft.
Medium Solar Energy System	40,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	40,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in TMS Traditional Main Street District				
Small Solar Energy System	12,000 sq. ft.	35 ft.	40 ft.	20 ft.
Medium Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in PFD Pedestrian Friendly Destination District				
Small Solar	12,000 sq. ft.	35 ft.	40 ft.	20 ft.

Energy System				
Medium Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Uses in NB Neighborhood Business District				
Small Solar Energy System	12,000 sq. ft.	35 ft.	40 ft.	20 ft.
Medium Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.
Large Solar Energy System	12,000 sq. ft.	100 ft.	100 ft.	100 ft.